

REPRODUCTION OF THE CLAIMS

1. (Previously Presented): A method of recovering anhydrous hydrogen fluoride from an azeotrope or azeotrope-like mixture comprising hydrogen fluoride and a halogenated hydrocarbon comprising:
 - providing an azeotrope or azeotrope-like mixture comprising hydrogen fluoride and at least one halogenated hydrocarbon;
 - extracting hydrogen fluoride from said mixture by contacting said mixture with a solution comprising from about 65 to about 93 wt.% sulfuric acid in water; and
 - subjecting the hydrogen fluoride extracted in said extraction step to flash distillation followed by the column fractionation distillation to produce anhydrous hydrogen fluoride containing less than 200 ppm of sulfur impurities.
2. (Canceled).
3. (Canceled).
4. (Previously Presented): The method of claim 1 wherein said sulfuric acid solution comprises from about 65 to about 85 wt% of sulfuric acid based on the total weight of the sulfuric acid solution.

5. (Previously Presented): The method of claim 1 wherein said sulfuric acid solution comprises from about 75 to about 85 wt% of sulfuric acid based on the total weight of the sulfuric acid solution.
6. (Previously Presented): The method of claim 1 wherein said sulfuric acid solution comprises about 80 wt% of sulfuric acid based on the total weight of the sulfuric acid solution.
7. (Previously Presented): A method of recovering anhydrous hydrogen fluoride from a mixture comprising hydrogen fluoride and a halogenated hydrocarbon comprising:
 - providing a mixture comprising hydrogen fluoride and at least one halogenated hydrocarbon selected from the group consisting of hydrochlorofluorocarbons, hydrochlorocarbons, and combinations thereof;
 - extracting hydrogen fluoride from said mixture by contacting said mixture with a solution comprising from about 65 to about 93 wt.% sulfuric acid in water;
 - and
 - subjecting the hydrogen fluoride extracted in said extraction step to flash distillation followed by the column fractionation distillation to produce anhydrous hydrogen fluoride containing less than 200 ppm of sulfur impurities.

8. (Previously Presented): The method of claim 7 wherein said halogenated hydrocarbon is selected from the group consisting of 1-chloro-1,2,2,2-tetrafluoroethane ("HCFC-124"), 1,1-dichloro-2,2,2-trifluoroethane ("HCFC-123"), chlorodifluoromethane ("HCFC-22"), and mixtures of two or more thereof.
9. (Canceled).
10. (Original): The method of claim 1 wherein said mixture comprising hydrogen fluoride and at least one halogenated hydrocarbon is a reaction product mixture obtained by reacting hydrogen fluoride with a chlorinated starting compound.
11. (Original): The method of claim 10 wherein said chlorinated starting compound is selected from the group consisting of 1,1,1,3,3-pentachloropropane, 1,1,1,2-tetrachloroethane, perchloroethylene, chloroform, 1,1,1,3,3-pentachlorobutane, 1,1,1,3,3,3-hexachloropropane, methylene chloride, and 1,1,1-trichloroethane.
12. (Original): The method of claim 10 wherein said chlorinated starting compound comprises 1,1,1,3,3-pentachloropropane.
13. (Cancelled)
14. (Cancelled)

15. (Cancelled)
16. (Previously Presented): The method of claim 1 wherein the anhydrous hydrogen fluoride produced contains less than about 100 ppm of sulfur impurities.
17. (Original): The method of claim 16 wherein the anhydrous hydrogen fluoride produced contains less than about 75 ppm of sulfur impurities.
18. (Previously Presented): The method of claim 1 wherein the sulfuric acid layer obtained via the extraction step contains less than about 5000 ppm of TOC impurities.
19. (Previously Presented): The method of claim 1 wherein the sulfuric acid layer obtained via the extraction step contains less than about 3000 ppm of TOC impurities.
20. (Previously Presented): The method of claim 1 wherein the sulfuric acid layer obtained via the extraction step contains less than about 1000 ppm of TOC impurities.
21. (Original): A method of producing anhydrous hydrogen fluoride comprising:
providing a mixture comprising hydrogen fluoride and at least one
halogenated hydrocarbon;

extracting hydrogen fluoride from said mixture with a solution of at least 98 wt.% sulfuric acid in water to provide an acid/HF mixture;

flash distilling said acid/HF mixture to provide a first HF product; adding water to the first HF product to form a diluted HF mixture; and distilling said diluted HF mixture to obtain anhydrous hydrogen fluoride.

22. (Previously Presented): The method of claim 7 wherein said sulfuric acid solution comprises from about 65 to about 85 wt% of sulfuric acid based on the total weight of the sulfuric acid solution.